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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,941	02/11/2002	Mingjing Li	MS1-880US	6962

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EXAMINER

TRUONG, CAM Y T

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 07/21/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,941

Applicant(s)

LI ET AL.

Examiner

Cam Y T Truong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

1. Claims 1-56 are pending in this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 15, 29 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear how "the statistical bigram correlation model" on claim 1, line 1, claim 15, lines 1-2, claim 29, lines 1-2, claim 43, lines 1-2 has been applied in the image retrieval method. Applicant(s) is (are) advised to amend the claims to show the statistical bigram correlation model in the image retrieval method.

Claims 2-14, 16-28, 30-42 and 44-56 are dependent on claims 10 and 19 respectively and therefore these claims are also rejected on that basis.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "bigram frequency, statistical bigram correlation model, unigram frequency" in claim 1, lines 1-9, claim 15, lines 1-9, claim 29, lines 1-12 and claim 34, lines 1-10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should

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include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1, 3, 8, 15, 17, 22, 29, 31, 36, 43, 45 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al (or hereinafter "Ma") (US 6347313) in view of Li et al (or hereinafter "Li") (US 6175829).

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As to claims 1, 15, 29 and 43, Ma teaches the claimed limitations:

“receiving a plurality of images responsive to multiple search sessions” as selecting images responsive to search sessions (col. 4, lines 42-60);

“determining whether the images are semantically relevant images via relevance feedback” as identifying images using the relevance feedback technique (col. 3, lines 45-60).

Ma does not explicitly teach the claimed limitation “and estimating a respective semantic correlation between each of at least one pair of the images with a respective bigram frequency, each respective bigram frequency being based on multiple search sessions in which each image of the pair is indicated to be a semantically relevant image”.

Li teaches the occurrence or frequency of the query criteria in the database and estimate the maximum and minimum number of matches for a given query image for determining similarity among images (col. 11, lines 15-55).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Li’s teaching of the occurrence or frequency of the query criteria in the database and estimate the maximum and minimum number of matches for a given query image for determining similarity among images to Ma’s system in order to provide a reduction in expensive multimedia query processing and to improve searching/retrieving similar images.

As to claims 3, 17, 31 and 45, Ma and Li disclose the claimed limitation subject matter in claim 1, Li further teaches the claimed limitation "responsive to a search session, dynamically updating the respective bigram frequency corresponding to two of the images" as (col. 1, lines 50-60; col. 14, lines 25-35).

As to claims 8, 22, 36 and 50, Ma teaches the claimed limitation " identifying, for each image obtained responsive to one or more search sessions of the multiple search sessions, a respective semantic support based on a similarity measure and/or the respective semantic correlation, the similarity measure corresponding to a similarity of a respective feature vector of the image and a search query corresponding to the session" as each session, a vector for a search query is calculated and database objects from the closes cluster within feature space (col. 5, lines 25-35, abstract).

7. Claims 4, 18, 32 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma in view of Li and further in view of admitted of prior art Huang, Combining Supervised Learning with Color Correlograms for Content-Based Image Retrieve 1997.

As to claims 4, 18, 32 and 46, Ma and Li disclose the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the respective semantic correlation is: (a) a positive correlation between two semantically relevant images; (b) a negative correlation between a semantically relevant image and a semantically irrelevant image; and (c) no correlation otherwise". Huang teaches the images marked

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positive are used to correlation between relevant or irrelevant images (page 1, col. Right, lines 20-28; page 2, col. Right, lines 30-50).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Huang's teaching of the images marked positive are used to correlation between relevant or irrelevant images to Mojsilovic and Zhu system in order to incorporate feedback information to enhance the quality of image retrieval using correlograms.

8. Claims 2, 9, 16, 23, 30, 37, 44 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma in view of Li and further in view of Mojsilovic et al (or hereinafter "Mojsilovic") (US 2003/0123737).

As to claims 2, 16, 30, and 44, Ma and Li disclose the claimed limitation subject matter in claim 1, except the claimed limitation "assigning a respective ranking score to each of the images based at least in part on the respective semantic correlation corresponding to the image and displaying only those images with a highest range of ranking scores". Mojsilovic teaches the displayed N images are those selected by the data processing system 100 to be the most similar to the query image, i.e., the N images with the highest computed similarity score (page 4, col. Right, lines 1-10).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Mojsilovic's teaching of displayed N images are those selected by the data processing system 100 to be the most similar to the query image,

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i.e., the N images with the highest computed similarity score to Ma and Li in order to provide the most relevance images corresponding to user's queries.

As to claims 9, 23, 37 and 51, Ma teaches the claimed limitation "identifying, for each image obtained responsive to one or more search sessions of the multiple search sessions, a respective semantic support based on a similarity measure and/or the respective semantic correlation, the similarity measure corresponding to a similarity of a respective feature vector of the image and a search query corresponding to the session" as each session, a vector for a search query is calculated and database objects from the closes cluster within feature space (col. 5, lines 25-35, abstract).

Ma does not explicitly teach the claimed limitation "assigning a respective ranking score to each of the images based upon the respective similarity measure, the respective semantic support, and a semantic weight; and displaying only those images with a highest range of respective ranking scores".

Mojsilovic teaches the displayed N images are those selected by the data processing system 100 to be the most similar to the query image, i.e., the N images with the highest computed similarity score (page 4, col. Right, lines 1-10).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Mojsilovic's teaching of displayed N images are those selected by the data processing system 100 to be the most similar to the query image, i.e., the N images with the highest computed similarity score to Ma and Li in order to

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provide the most relevance images corresponding to user's queries and to find similar images quickly and correctly.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure
Zhu et al (US 6480840).

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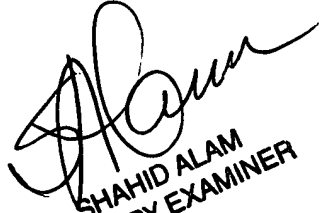
Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T Truong whose telephone number is (703) 605-1169. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cam-Y Truong
07/07/2004


SHAHID ALAM
PRIMARY EXAMINER